

The opinion in support of the decision being entered today is *not* binding precedent of the Board.

Paper No. 34

UNITED STATES PATENT AND TRADEMARK OFFICE

---

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

---

*Ex parte* ZHI-CHUN HONKASALO, HARRI HONKASALO,  
HARRI JOKINEN, and DAVID LIN CHINE

---

Appeal No. 2001-1850  
Application No. 08/675,893

---

HEARD: Sept. 18, 2002<sup>1</sup>

---

Before KRASS, JERRY SMITH, and BARRY, *Administrative Patent Judges*.  
BARRY, *Administrative Patent Judge*.

DECISION ON APPEAL

A patent examiner rejected claims 1, 3-8, 10-17, and 19-27. The appellants appeal therefrom under 35 U.S.C. § 134(a). We reverse.

BACKGROUND

The appellants' invention concerns mobile telecommunications. According to the appellants, the need for high-speed data services in mobile telecommunication networks is increasing. (Spec. at 3.) They explain that Public Switched Telephone

---

<sup>1</sup> Although the examiner "request[ed] the opportunity to present arguments at the oral hearing," (Paper No. 30), he failed to appear thereat.

Network data services of the public telephone network, such as modems and telefax terminals of class G3, require transfer rates of 14.4 kbit/s. (*Id.*) Data transfer rates of at least 64 kbit/s, the appellants add, are needed for Integrated Services Digital Network services. (*Id.*)

Striving to increase the data transfer rate of a mobile telecommunications network, the appellants allocate parallel traffic channels to a single user. More specifically, their "multi-channel technique" grants a mobile station access to at least two traffic channels for one call. (*Id.* at 5.) A high-speed data signal to be transmitted over a radio path is split into several data signals of lower speed. The lower-speed signals are then simultaneously transmitted over lower-speed, parallel channels. After reception, the lower-speed signals are combined to recover the original, high-speed signal.

Depending on whether two, three, or more traffic channels are assigned to a user, the appellants assert that "data transfer rate[s] can be doubled, tripled, etc. . . ." (*Id.*) In the Pan-European Global System for Mobile Communications system, for example, they explain that two traffic channels (i.e., time slots) will enable a data transfer rate of  $2 \times 9.6$  kbit/s, which is enough for a 14.4 kbit/s modem or telefax

terminal. (*Id.*) Six time slots, the appellants add, will enable a data transfer rate of 64 kbit/s. (*Id.*)

A further understanding of the invention can be achieved by reading the following claim:

24. A method for high-speed data transmission over an air interface between a mobile station and a fixed mobile communication network in a digital mobile communication system, said method comprising the steps of:

splitting a high-speed data signal into two or more signals of lower speed in the mobile communication network at a location remote from a serving base station;

transmitting said lower-speed signals to the serving base station;

allocating, for high-speed data transmission, to the mobile station at least two traffic channels, the number of said allocated traffic channels corresponding to the number of said signals of lower speed;

carrying out channel coding, interleaving and modulating operations separately for each one of said lower-speed signals at the serving base station;

transmitting each said data signal of lower speed in respective different ones of said allocated traffic channels over a radio path from said serving base station to said mobile station; and

carrying out demodulation, deinterleaving and channel decoding operations separately for each one of said lower-speed signals at the mobile station.

Claims 1, 3-8, 10-17, 19-21, 24, and 25 stand rejected under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 5,583,851 ("Kato") in view of Qualcomm Inc. ("Qualcomm"), *An Overview of the Application of Code Division Multiple Access (CDMA) To Digital Cellular Systems and Personal Cellular Networks*. (May 21, 1992). Claims 22 and 23 stand rejected under § 103(a) as obvious over Kato. Claims 26 and 27 stand rejected under § 103(a) as obvious over Kato in view of the appellants' admitted prior art ("AAPA").

#### OPINION

Rather than reiterate the positions of the examiner or appellants *in toto*, we address the main points of contention therebetween. Admitting that "Kato does not teach channel coding and interleaving of the data in their CDMA system," (Final Rejection at 6<sup>2</sup>), the examiner concludes, "it would have been an obvious choice in design in choosing between a common channel coder and interleaver or a plurality of channel coders and interleavers, wherein the factors to consider are the reduced cost and size of using one common channel coder and interleaver versus the speed and simple interconnections of using a plurality." (*Id.* at 7.) Admitting that "Kato teaches the means for splitting the high-speed data signal (separating circuit 24 in Figure 6) located

---

<sup>2</sup>We advise the examiner to copy his rejections into his examiner's answers rather than merely referring to a "rejection . . . set forth in prior Office Action." (Examiner's Answer at 3.)

at the base station (units at the transmitter side 21)," (*id.* at 3), he similarly concludes, "[w]ith respect to the limitation of splitting at a location remote from a serving base station, this feature is an obvious design choice since it has been judicially determined that a skilled artisan would have been motivated to rearrange parts without changing the functions of these parts (see MPEP 2144.04, section VI, part C, which cites *In re Japikse*, 86 USPQ 70 (CCPA 1950), *In re Kuhle*, 188 USPQ 7 (CCPA 1975), and *Ex parte Chicago Rawhide Mfg. Co.*, 223 USPQ 351, 353 (Bd.Pat.App. & Inter. 1984))." (Examiner's Answer at 6.)

The appellants argue, "[t]he Qualcomm publication does not teach or suggest providing separate channel coding and interleaving as well as separate deinterleaving and channel decoding for each of the lower-speed signals." (Appeal Br. at 10.) They further argue, "there is no motivation or reason taught by U.S. '851 to move the separating circuit 24 to a location remote from the base station. . . ." (Appeal Br. at 14.)

"The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification." *In re Fritch*, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1784 (Fed. Cir. 1992) (citing *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984)). "[T]he factual inquiry whether to combine references must be

thorough and searching." *McGinley v. Franklin Sports, Inc.*, 262 F.3d 1339, 1351-52, 60 USPQ2d 1001, 1008 (Fed. Cir. 2001). This factual question cannot "be resolved on subjective belief and unknown authority," *In re Lee*, 277 F.3d 1338, 1343-44, 61 USPQ2d 1430, 1434 (Fed. Cir. 2002); "[i]t must be based on objective evidence of record." *Id.* at 1343, 61 USPQ2d at 1434. Although couched concerning combining prior art references, we hold the same requirements apply to modifying such references.

Here, although Qualcomm evidences that "it would have been obvious to provide channel coding and interleaving in Kato in order to conform to the proposed standards for CDMA," (Final Rejection at 6-7), the examiner fails to show objective evidence of the desirability of implementing the channel coding and interleaving as a **plurality** of channel coders and interleavers rather than a single channel coder and interleaver. Similarly, he fails to show objective evidence of the desirability of moving "the separating circuit in Kato . . . [to a location] external from the base station. . . ." (Final Rejection at 3.) His broad conclusions that such modifications would have been "an obvious choice in design," (Final Rejection at 7), or "an obvious design choice," (Examiner's Answer at 6), "are not 'evidence.'" *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999)(citing *McElmurry v. Arkansas Power & Light Co.*, 995 F.2d 1576, 1578, 27 USPQ2d 1129, 1131 (Fed. Cir. 1993); *In re Sichert*, 566 F.2d

1154, 1164, 196 USPQ 209, 217 (CCPA 1977)). Therefore, we reverse the rejections of claims 1, 3-8, 10-17, and 19-27.

#### CONCLUSION

In summary, the rejections of claims 1, 3-8, 10-17, and 19-27 under § 103(a) are reversed.

REVERSED

ERROL A. KRASS  
Administrative Patent Judge

JERRY SMITH  
Administrative Patent Judge

LANCE LEONARD BARRY  
Administrative Patent Judge

)  
)  
)  
)  
)  
) BOARD OF PATENT  
) APPEALS  
) AND  
) INTERFERENCES  
)  
)  
)  
)  
)

Appeal No. 2001-1850  
Application No. 08/675,893

Page 9

PILLSBURY WINTHROP, LLP  
1600 Tysons Boulevard  
MCLEAN, VA 22102

APPEAL NO. 2001-1850 - JUDGE BARRY  
APPLICATION NO. 08/675,893

APJ BARRY - **2 copies**

APJ KRASS

APJ JERRY SMITH

After signing, forward to Team 3 for proofing.

After proofing, return to APJ Barry for disk.

After APJ Barry provides disk, forward to Team 3 for entering changes and mailing.

Prepared By: APJ BARRY

**DRAFT SUBMITTED:** 26 Sep 03

**FINAL TYPED:**

Team 3:

I typed all of this opinion.

Please proofread spelling, cites, and quotes. Mark your proposed changes on the opinion, but do NOT change matters of form or style. I will include the diskette with the signed copy so that you can make all changes before mailing.

For any additional reference provided, please prepare PTO 892 and include copy of references

Thanks, Judge Barry